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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,429	10/20/2003	David Langridge	920537-94975	2806
23644 7590 07/05/2007 BARNES & THORNBURG LLP P.O. BOX 2786 CHICAGO, IL 60690-2786			EXAMINER LE, THI Q	
			ART UNIT 2613	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/689,429	<b>Applicant(s)</b> LANGRIDGE, DAVID	
	<b>Examiner</b> Thi Q. Le	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/25/2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant's admitted prior art** and in view of **Johnson et al. (US PGPub 2004/0120706)** and further in view of **Sugawara et al. (US PGPub 2004/0165618)**.

Consider **claim 1**, applicant's admitted prior art clearly shows and discloses, an optical communications network, comprising: a source node (source node 10; figure 1) and a sink node (sink node 12; figure 1); a sub-network (read as, second network 16; figure 1) between the source node and the sink node; a tandem connection monitoring arrangement (read as, TCM source 20 and 22; figure 1) provided at first and second edges of the sub-network for monitoring errors introduced by the sub-network, wherein the tandem connection monitoring arrangement at the first edge provides error information with the optical data passing through the sub-network,

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wherein the error information includes an error count or a first alarm indication indicative of an incoming fault (figure 1; paragraphs 0010, 0012). Applicant's admitted prior art fails to disclose, a sub-network comprising a plurality of sub-network nodes; and wherein at least one of the sub-network nodes is provided with a sub-network monitoring arrangement, wherein when the sub-network monitoring arrangement identifies a fault, a second alarm indication indicative of a fault is provided as the error information, and wherein the tandem connection monitoring arrangement at the second edge, upon receipt of the second alarm indication, replaces the second alarm indication with a fault indication; and wherein the first alarm, second alarm and fault indication are different from each other.

In related art, Johnson et al. disclose, a sub-network comprising a plurality of sub-network nodes (read as, nodes 150 and 150'; figure 6); and wherein at least one of the sub-network nodes is provided with a sub-network monitoring arrangement (read as, fault monitor 30; figure 6), wherein when the sub-network monitoring arrangement identifies a fault, a second alarm indication indicative of a fault is provided as the error information (read as, generating an AIS signal in the signal overhead, when a fault is detected; paragraph 0034), and wherein the tandem connection monitoring arrangement at the second edge, upon receipt of the second alarm indication, replaces the second alarm indication with a fault indication (read as, the egress node comprises means for detecting a signal degradation alarm and loss of signal alarm, and take appropriate action; paragraph 0019) (figure 6; paragraph 0019, 0034, 0084-0086).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Johnson et al. with applicant's admitted prior art. To avoid superfluous alarm reports at connection termination points.

In related art, Sugawara discloses, a transmission system that uses tandem connections for detecting transmission errors. Wherein, a second alarm indication indicative of a fault, different from the first alarm indication, is provided as the error information (figure 13 shows, a network configuration that is divided into three regions, wherein region 1 is the tandem connection region. Line Terminal Equipment (LTE) 4001 monitors the B3 byte for the number of errors, 1, which have occurred on a path from the source PTE 4000-1 to the LTE 4001, and inserts the number of errors 1 into the Z5 byte and transmits the multiplexed signal to a LTE 4002. The LTE 4003 again monitors the B3 byte for the number of errors 1' which have occurred on a path from the source PTE 4000-1 to 40002 and subtracts the number of errors 1 received through the Z5 byte from the number of errors 1' to manage the number of errors which have occurred in the tandem connection; figure 13, paragraph 0084); and wherein the tandem connection monitoring arrangement at the second edge, upon receipt of the first or second alarm indication, replaces the first or second alarm indication with a fault indication, different from the first and second alarm indications (read as, at the egress node of the tandem connection calculates the total number of errors and transmits the result; figures 12A-B, paragraphs 0086-0088).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Sugawara with applicant's admitted prior art; so that the number of errors and the location of the errors occurring within the network can be accurately monitored and indicated.

Consider **claim 2**, and **as applied to 1 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, wherein when a sub-network monitoring arrangement provides

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a second alarm indication, an alarm message is provided to a network control centre (read as, with AIS is detected by a node, a path alarm signal is sent to the network management center) (Applicant's admitted prior art; figure 1, paragraph 0021).

Consider **claim 3**, and **as applied to 2 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, wherein when a sub-network monitoring arrangement receives data already having a second alarm indication, no alarm message is provided to the network control centre (read as, to avoid superfluous alarm reports at connection termination points, the network element detecting the loss of signal alarm (LOS) indication will assert an AIS signal in the line overhead. Thus, downstream nodes will not generate more LOS alarm indication.) (Johnson et al.; figure 6, paragraph 0034, 0084-0086).

Consider **claim 4**, and **as applied to 1 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, wherein the error information comprises bit interleaved parity violation information or an incoming alarm indication signal (read as, errors are record in the N1 byte) (Applicant's admitted prior art; figure 1, paragraphs 0014-0015).

Consider **claim 5**, and **as applied to 1 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, a network comprising a SONET or SDH network (Applicant's admitted prior art; figure 1, paragraph 0006).

Consider **claim 6**, and **as applied to 5 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, wherein the tandem connection monitoring arrangement inserts error information into the N1 or N2 byte (Applicant's admitted prior art; figure 1, paragraphs 0010-0015).

Consider **claim 7**, and **as applied to 6 above**, applicant's admitted prior art as modified by Johnson et al. further disclose, wherein the tandem connection monitoring arrangement inserts error information into the IEC bits of the N1 byte (Applicant's admitted prior art; figure 1, paragraphs 0010-0015).

Consider **claim 8**, applicant's admitted prior art clearly shows and discloses, a method of monitoring errors in an optical communications network, comprising a source node and a sink node, and having a sub-network provided in a path between the source node and the sink node, the method comprising (figure 1; paragraphs 0010-0012): providing error information with optical data to be passed through the sub-network at a tandem connection monitoring arrangement at a first edge of the sub-network, the error information including an error count or a first alarm indication indicative of a fault (read as, generating an AIS code in the overhead indicating that network fault is external from the sub-network at the ingress node; paragraph 0019). Applicant's admitted prior art fails to disclose, a sub-network comprising a plurality of sub-network nodes; and at a sub-network node, monitoring receipt of the optical data, and when a fault is identified, providing a second alarm indication indicative of the fault as the error information; and at a tandem connection monitoring arrangement at a second edge of the sub-network, upon receipt of the second alarm indication, replacing the second alarm indication with a fault indication; and wherein the first alarm, second alarm and fault indication are different from each other.

In related art, Johnson et al. disclose, a sub-network comprising a plurality of sub-network nodes (read as, nodes 150 and 150'; figure 6); and at a sub-network node, monitoring receipt of the optical data, and when a fault is identified, providing a second alarm indication

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indicative of the fault as the error information (read as, generating an AIS signal in the signal overhead, when a fault is detected; paragraph 0034); and at a tandem connection monitoring arrangement at a second edge of the sub-network, upon receipt of the second alarm indication, replacing the second alarm indication with a fault indication (read as, the egress node comprises means for detecting a signal degradation alarm and loss of signal alarm, and take appropriate action; paragraph 0019) (figure 6; paragraph 0019, 0034, 0084-0086).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Johnson et al. with applicant's admitted prior art. To avoid superfluous alarm reports at connection termination points. In related art, Sugawara discloses, a transmission system that uses tandem connections for detecting transmission errors. Wherein, a second alarm indication indicative of a fault, different from the first alarm indication, is provided as the error information (figure 13 shows, a network configuration that is divided into three regions, wherein region 1 is the tandem connection region. Line Terminal Equipment (LTE) 4001 monitors the B3 byte for the number of errors, 1, which have occurred on a path from the source PTE 4000-1 to the LTE 4001, and inserts the number of errors 1 into the Z5 byte and transmits the multiplexed signal to a LTE 4002. The LTE 4003 again monitors the B3 byte for the number of errors 1' which have occurred on a path from the source PTE 4000-1 to 40002 and subtracts the number of errors 1 received through the Z5 byte from the number of errors 1' to manage the number of errors which have occurred in the tandem connection; figure 13, paragraph 0084); and wherein the tandem connection monitoring arrangement at the second edge, upon receipt of the first or second alarm indication, replaces the first or second alarm indication with a fault indication, different from the first and second alarm indications (read as,



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at the egress node of the tandem connection calculates the total number of errors and transmits the result; figures 12A-B, paragraphs 0086-0088).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Sugawara with applicant's admitted prior art; so that the number of errors and the location of the errors occurring within the network can be accurately monitored and indicated.

Consider **claim 9**, and **as applied to 8 above**, is rejected for the same reason as claim 2 above.

Consider **claim 10**, and **as applied to 9 above**, is rejected for the same reason as claim 3 above.

Consider **claim 11**, and **as applied to 8 above**, is rejected for the same reason as claim 4 above.

Consider **claim 12**, and **as applied to 8 above**, is rejected for the same reason as claim 5 above.

Consider **claim 13**, and **as applied to 12 above**, is rejected for the same reason as claim 6 above.

Consider **claim 14**, and **as applied to 13 above**, is rejected for the same reason as claim 7 above.

Consider **claim 15**, applicant's admitted prior art clearly shows and discloses, a optical packet structure for use in an optical network in which a tandem connection monitoring arrangement provided at first and second edges of a sub-network for monitoring errors

introduced by the sub-network (figure 1; paragraphs 0010-0012), the packet structure comprising an optical header and an optical data payload, wherein the header comprises a tandem connection monitoring byte which includes a plurality of incoming error counter bits, wherein the incoming error counter bits can be set to (figure 2; paragraphs 0016-0018): a first series of values which represent different numbers of errors (read as, 4 IEC bits of the N1 byte are use to indicated error count; paragraph 0017)) ; a second value representing a first alarm signal indicating a fault external to the sub-network (read as, digital value “1110” of the 4 IEC bits represent fault external to the sub-network; paragraph 0019). Applicant’s admitted prior art fails to disclose, a third value representing a second alarm signal indicating a fault internal to the sub-network.

In related art, Johnson et al. disclose, a third value representing a second alarm signal indicating a fault internal to the sub-network (read as, the node generating LOS alarm indication signal, when a fault is detected; paragraph 0034) (figure 6; paragraphs 0034, 0084-0086).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Johnson et al. with applicant’s admitted prior art. To avoid superfluous alarm reports at connection termination points.

Consider **claim 16**, and **as applied to 15 above**, applicant’s admitted prior art as modified by Johnson et al. further disclose, wherein the tandem connection monitoring byte comprises the SONET or SDH N1 or N2 byte (Applicant’s admitted prior art; figure 1, paragraphs 0010-0015).

Consider **claim 17**, applicant’s admitted prior art clearly shows and discloses, instructions for controlling nodes of an optical communications network comprising a source node and a sink node, and having a sub-network provided in a path between the source node and

the sink node, the instructions implementing a method comprising (figure 1; paragraphs 0010-0012): providing error information with optical data to be passed through the sub-network at a tandem connection monitoring arrangement at a first edge of the sub-network, the error information including an error count or a first alarm indication indicative of a fault (read as, generating an AIS code in the overhead indicating that network fault is external from the sub-network at the ingress node; paragraph 0019). Applicant's admitted prior art fails to disclose, a computer readable medium carrying instruction; a sub-network comprising a plurality of sub-network nodes; and at a sub-network node, monitoring receipt of the optical data, and when a fault is identified, providing a second alarm indication indicative of the fault as the error information; and at a tandem connection monitoring arrangement at a second edge of the sub-network, upon receipt of the second alarm indication, replacing the second alarm indication with a fault indication.

In related art, Johnson et al. disclose, a sub-network comprising a plurality of sub-network nodes (read as, nodes 150 and 150'; figure 6); and at a sub-network node, monitoring receipt of the optical data, and when a fault is identified, providing a second alarm indication indicative of the fault as the error information (read as, generating an AIS signal in the signal overhead, when a fault is detected; paragraph 0034); and at a tandem connection monitoring arrangement at a second edge of the sub-network, upon receipt of the second alarm indication, replacing the second alarm indication with a fault indication (read as, the egress node comprises means for detecting a signal degradation alarm and loss of signal alarm, and take appropriate action; paragraph 0019) (figure 6; paragraph 0019, 0034, 0084-0086).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Johnson et al. with applicant's admitted prior art. To avoid superfluous alarm reports at connection termination points.

It would have been obvious for a person of ordinary skill in the art at the time of the invention to execute the method as described above using firmware. It is well known, that firmware are stored in a memory, which will be used by microcontrollers to execute the method above.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.
5. Applicant's arguments filed 4/25/2007 with respect to claim 15 have been fully considered but they are not persuasive.

On page 9, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs, applicant argues Johnson et al. is of no relevance to tandem connection monitoring of a sub-network; and nothing in either the admitted prior art or Johnson et al. to suggest the values for a tandem connection monitoring byte could distinguish between faults external and internal to a sub-network. The examiner respectfully disagrees, firstly, Johnson et al. clearly pointed out in paragraph 0051 that "another special feature of the digital wrapper overhead is the support for tandem connection monitoring". Thus, the examiner submits that Johnson et al. is of relevance to tandem connection monitoring of a sub-network. Secondly, the features of "the values for a tandem connection monitoring byte could distinguish

between faults external and internal to a sub-network” is not claimed in neither claim 1 nor claim 8.

6. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “the values for a tandem connection monitoring byte could distinguish between faults external and internal to a sub-network”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

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9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.


If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Thi Le*



KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER